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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,611	12/28/2001	Moo-Won Byun	3317.2.2	7975

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EXAMINER

PATEL, DHIRUBHAI R

ART UNIT	PAPER NUMBER
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2831

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/019,611	Applicant(s) BYUN, MOO-WON	
	Examiner DHIRU R PATEL	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 09 December 2002.

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-20 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____

4) ☐ Interview Summary (PTO-413) Paper No(s). _____

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____

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Part III DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because clause regarding "willful false statements ..." required by 37 CFR 1.68 has been omitted

Specification

2. The disclosure is objected to because of the following informalities: the reference characters must be properly applied, no single reference character being used for two different parts or for a given part and a modification of such part. Such as in the specification on page 13 line 24, " flexible webs 12 " while on page 14 line 12, " longitudinal ridges 12". Applicant is responsible for providing separate reference number for each part disclosed in the specification. See MPEP § 608.01 (g) .

Applicant is responsible for reviewing the entire specification for each reference number and revise as required.

Appropriate correction is required.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 (a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-12, and 16-20 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Fochler (4,741,593) in view of Bondon (4,705,914).

Fochler discloses:

Regarding claims 1 and 10, (a) a plurality of plastic inner ducts 10, 12, 14 contiguous (see fig 2 abstract lines 1-6, column 2 lines 15-68), co-directionally extending, substantially parallel, in abutting contact with each other (see fig 2, column 1 lines 60-68, column 2 lines 55-65, column 3 lines 34-40, and column 4 lines 50-55), each of said inner ducts having a cross sectional area sufficient to contain at least one cable (see fig 2, column 1 lines 5-15 and column 1 lines 60-65); and (b) a plastic outer duct 20 (sheath of synthetic resin, see fig 2, column 3 lines 34-46) encircling said inner ducts over their entire length to retain them in their contiguous relationship (see figs 1-2, column 3 lines 33-45, column 4 lines 64-68, column 5 lines 1-5); (d) whereby said assembly is sufficiently flexible to be coiled around

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transportable reels 26 (see fig 3, column 4 lines 1-8) as well as sufficiently strong to withstand dirt in a trench (see column 2 lines 48-52 and column 4 lines 1-10), with respect to claim 10, said inner ducts and said outer duct are made of polyethylene (see column 3 lines 9-46, please note that Fochler disclosed that said sheath 20 can be constructed from synthetic resin materials, see column 3 lines 44-46, and also disclosed that synthetic resins includes polyethylene, see column 3 lines 10-15), but fails to disclose said outer duct has a corrugated tubular section including a plurality of contiguous ridges and troughs extending over the entire length (for claims 1 and 10). Bondon teaches the use of a cylindrical metallic sheath 11 of copper, aluminum or other suitable material with corrugated circumferentially throughout the length of the cable (see fig 1, column 4 lines 30-35, please note that corrugated include alternating ridges and trough or grooves). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide said outer duct 20 of the assembly of Fochler being corrugated tubular section including a plurality of contiguous ridges and troughs extending over the entire length (for claims 1 and 10) as taught by Bondon in order to provide a strong, safe, lightweight sheath as well as desirable strength and bending characteristics, and to provide flexibility to facilitate changes of direction of said outer duct during installation.

Regarding claim 2, the modified assembly of Fochler shows all of the claimed features as shown above, including each of said inner ducts being made of polyethylene (see column 3 lines 10-20 of Fochler).

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Regarding claims 3-4, the modified assembly of Fochler shows all of the claimed features as shown above, including each of said inner ducts has a substantially round cross sectional shape(see fig 2 of Fochler for claim 3), and each of said inner ducts being made separately extruded (see fig 2 of Fochler for claim 4).

Regarding claim 6, the modified assembly of Fochler shows all of the claimed features as shown above, but fails to disclose said outer duct has a substantially round cross sectional shape, and applicant doesn't state a particular problem is solved by the round cross sectional shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide said outer duct of the modified assembly of Fochler with a substantially round cross sectional shape , since more than a mere change of form is necessary for patentability. In re Span-Deck Inc. V. Fab-con, Inc. (CA 8, 1982) 215 USPQ 835.

Regarding claim 7 , the modified assembly of Fochler shows all the features of the claimed invention as shown above, but fails to disclose said outer duct has a substantially ellipsoid cross sectional shape, and applicant doesn't state a particular problem is solved by the substantially ellipsoid cross sectional shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide said outer duct of the modified assembly of Fochler with a substantially ellipsoid cross sectional shape, since more than a mere change of form is necessary for patentability. In re Span-Deck Inc. V. Fab-con, Inc. (CA 8, 1982) 215 USPQ 835.

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Regarding claim 8, the modified assembly of Fochler shows all of the claimed features as shown above, including said outer duct has a substantially triangular cross sectional shape with round corners (see fig 2 of Fochler).

Regarding claim 9, the modified assembly of Fochler shows all the features of the claimed invention as shown above, but fails to disclose said outer duct has a substantially quadrangular cross sectional shape with round corners, and applicant doesn't state a particular problem is solved by the substantially quadrangular cross sectional shape with round corners. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide said outer duct of the modified assembly of Fochler with a substantially ellipsoid cross sectional shape with round corners, since more than a mere change of form is necessary for patentability. In re Span-Deck Inc. V. Fab-con, Inc. (CA 8, 1982) 215 USPQ 835.

Regarding claim 11, the modified assembly of Fochler shows all of the claimed features as shown above, but fails to disclose said inner ducts and said outer duct are welded together at the contiguous portions where the troughs of said outer duct and the outer peripheral surfaces of said inner ducts are connected. It is well known in the electrical art to connect said inner ducts and said outer duct being welded together at the contiguous portions where the troughs of said outer duct and the outer peripheral surfaces of said inner ducts being connected. It would have been an obvious matter of design choice to provide said inner ducts and said outer duct being welded together at the contiguous portions where the troughs of said outer duct and the outer peripheral surfaces of said inner ducts being

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connected , since applicant has not disclosed that said inner ducts and said outer duct are welded together at the contiguous portions where the troughs of said outer duct and the outer peripheral surfaces of said inner ducts are connected solves any stated problem or is for any particular purpose, and it appears that the invention would perform equally well if designed with said inner ducts and said outer duct being welded together at the contiguous portion where the troughs of said outer duct and the outer peripheral surfaces of said inner ducts being connected of the modified assembly of Fochler.

Regarding claim 12, the modified assembly of Fochler shows all of the claimed features as shown above, including each of said inner ducts is made separately extruded (see fig 2 of Fochler).

Regarding claim 16, the modified assembly of Fochler shows all of the claimed features as shown above, including the wall of said inner ducts are formed with corrugation (see column 1 lines 65-67 of Fochler).

Regarding claim 17, the modified assembly of Fochler shows all of the claimed features as shown above, but fails to disclose said outer duct has a substantially round cross sectional shape, and applicant doesn't state a particular problem is solved by the substantially round cross sectional shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide said outer duct of the modified assembly of Fochler with a substantially round cross sectional shape, since more than a mere change of form is necessary for patentability. In re Span-Deck Inc. V. Fab-con, Inc. (CA 8, 1982) 215 USPQ 835.

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Regarding claim 18, the modified assembly of Fochler disclose all the features of the claimed invention as shown above, but fails to disclose said outer duct has a substantially ellipsoid cross sectional shape, and applicant doesn't state a particular problem is solved by the substantially ellipsoid cross sectional shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide said outer duct of the modified assembly of Fochler with a substantially ellipsoid cross sectional shape, since more than a mere change of form is necessary for patentability. In re Span-Deck Inc. V. Fab-con, Inc. (CA 8, 1982) 215 USPQ 835.

Regarding claim 19, the modified assembly of Fochler shows all of the claimed features as shown above, including said outer duct has a substantially triangular cross sectional shape with round corners (see fig 2 of Fochler).

Regarding claim 20, the modified assembly of Fochler disclose all the features of the claimed invention as shown above, but fails to disclose said outer duct has a substantially quadrangular cross sectional shape with round corners, and applicant doesn't state a particular problem is solved by the substantially quadrangular cross sectional shape with round corners. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide said outer duct of the modified assembly of Fochler with a substantially quadrangular cross sectional shape with round corners, since more than a mere change of form is necessary for patentability. In re Span-Deck Inc. V. Fab-con, Inc. (CA 8, 1982) 215 USPQ 835.

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4. Claim 5 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over Fochler (4,741,593) in view of Bondon (4,705,914), and further in view of Vogelsang (5,236,016). Regarding claim 5, the modified assembly of Fochler disclose all the features of the claimed invention as shown above, but fails to disclose each of said inner ducts being connected by flexible connecting webs. Vogelsang teaches the use of three identical plastic tubes 2 which are interconnected by flexible connecting webs 3 (see fig 3, column 5 lines 39-45, column 6 lines 60-65) in order for said tubes to be selectively disposed in a plane and rolled by bending at the webs into a bundle (see column 3 lines 40-47, and column 6 lines 60-67 of Vogelsang). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to connect each of said inner ducts of the modified assembly of Fochler by using flexible webs as taught by Vogelsang in order for said inner ducts to be selectively disposed in a plane and rolled by bending at the webs into a bundle to facilitate carrying at construction site as well as for storage.

5. Claim 13 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over Fochler (4,741,593) in view of Bondon (4,705,914), and further in view of Vogelsang (5,236,016). Regarding claim 13, the modified assembly of Fochler disclose all the features of the claimed invention as shown above, but fails to disclose each of said inner ducts being connected by flexible connecting webs. Vogelsang teaches the use of three identical plastic tubes 2 which are interconnected by flexible connecting webs 3 (see fig 3, column 5 lines 39-45, column 6 lines 60-65) in order for said tubes to be selectively disposed in a plane and rolled by bending at the webs into a bundle (see column 3 lines 40-47, and column 6 lines 60-67 of

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Vogelsang). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to connect each of said inner ducts of the modified assembly of Fochler by using flexible webs as taught by Vogelsang in order for said inner ducts to be selectively disposed in a plane and rolled by bending at the webs into a bundle to facilitate carrying at construction site as well as for storage.

6. Claims 14-15 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Fochler (4,741,593) in view of Bondon (4,705,914), and further in view of Battle (5,463,187). Regarding claims 14-15, the modified assembly of Fochler disclose all the features of the claimed invention as shown above, but fails to disclose the interior surfaces of said inner ducts being formed with longitudinal ridges (for claim 14) and the interior surfaces of said inner ducts being formed with spiral ridges (for claim 15) upon which the cable ride as it pulled through them . Battle teaches the use of the interior surfaces of the inner ducts can be formed with longitudinal, spiral , or circumferential ridges in order to reduce friction between the inner ducts and fiber -optic cable as the cable being pulled through the system (see column 5 lines 65-67, column 6 lines 1-5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the interior surfaces of said inner ducts of the modified assembly of Fochler being formed with longitudinal ridges (for claim 14) as taught by Battle in order to reduce friction between the inner ducts and the cables during the cables pulling, and the interior surfaces of said inner ducts of the modified assembly of Fochler being formed with spiral ridges (for claim 15)

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as taught by Battle in order to reduce friction between the inner ducts and the cables during the cables pulling.

Response to Arguments

7. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Contact information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dhiru Patel whose telephone number is (703) 308 -3748. The examiner can normally be reached on Mondays- Thursdays from 6:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard be reached at 703-308-3682. The fax number for this Group is 703-305-3431. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Dhiru Patel
Patent Examiner
Group Art Unit 2831
February 24, 2003

Dhiru Patel